

AD-A141 424

ANALYSIS OF BENEFITS REALIZED FROM MULTIVEAR
CONTRACTING FOR THE BLACK HAWK HELICOPTER(U) GENERAL
ACCOUNTING OFFICE WASHINGTON DC NATIONAL SECURITY AND
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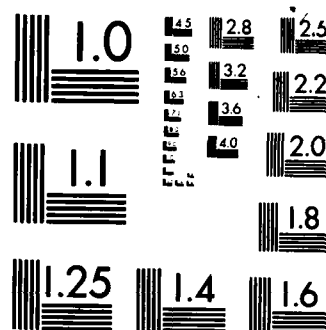
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BY THE U.S. GENERAL ACCOUNTING OFFICE

Report To The Chairman, Subcommittee On
Defense, Committee On Appropriations,
House Of Representatives

AD-A141 424

Analysis Of Benefits Realized From Multiyear
Contracting For The Black Hawk Helicopter

In 1982, the Congress authorized a \$950 million 3-year multiyear contract for 294 Black Hawk helicopters. The Army estimated that such an arrangement would save about \$81.1 million, or 7.9 percent, compared with three successive annual contracts for the same number of helicopters. GAO's analysis indicated an estimated budgetary savings to the Army of \$73.9 million, with a net discounted savings to the government of about \$36.6 million, or about 4.6 percent. GAO's estimate of net savings takes into account the cost of providing funds earlier under the multiyear contract. In addition, revenue to the U.S. Treasury may be reduced because of the tax implications of a multiyear contract.

Neither the Army nor the contractor had evidence that the Black Hawk multiyear contract significantly enhanced the defense industrial base, another anticipated benefit of multiyear contracting.

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NATIONAL SECURITY AND
INTERNATIONAL AFFAIRS DIVISION

UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548



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B-206570

The Honorable Joseph P. Addabbo
Chairman, Subcommittee on Defense
Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

In response to your January 28, 1983, request, we studied the potential monetary savings and other benefits attributed to the Army's multiyear contract to procure 294 Black Hawk helicopters. Awarded on April 12, 1982, this 3-year \$950 million contract between the Army and United Technologies Corporation's Sikorsky Aircraft Division in Stratford, Connecticut, was one of the first multiyear awards for a major weapon system under the Department of Defense's enhanced multiyear contracting authority.

BACKGROUND

Multiyear contracts are proposed as a means of reducing costs. In evaluating a proposed multiyear procurement, there are both financial and budgetary implications to be considered. If there is certainty in the number of items--such as Black Hawk helicopters--to be bought, then the question is whether to buy them annually or on a multiyear basis. If there are estimated savings by buying multiyear, then the decision to use the multiyear approach depends upon the amount of estimated savings versus the risks of the contract not being executed as planned. Prior to enacting legislation which first authorized multiyear contracting, potential savings were generally estimated by the Department of Defense (DOD) at between 10 to 20 percent. DOD has recently recognized such estimates as somewhat optimistic.

Because approving a multiyear purchase commits the federal government to the program for a number of years, the budgetary aspects of the decision must also be considered. For example, the dollar amount of commitment from the new multiyear candidates coupled with ongoing multiyear contract programs may be greater than the Congress is willing to accept.

To forgo the flexibility of an annual review and approval of major weapon system procurements, the Congress primarily expects significant cost reductions. Other benefits, such as enhancements to the defense industrial base, are also expected.

The Army believed that the Black Hawk helicopter procurement was a candidate for a multiyear contract. On June 2, 1981, it asked Sikorsky to submit separate proposals for (1) an annual contract for fiscal year 1982 requirements of 108 helicopters and (2) a multiyear contract for fiscal year 1982, 1983, and 1984 requirements of 300 helicopters. The quantities were later reduced by 6 units to 102 and 294 helicopters, respectively.

Sikorsky submitted its annual and multiyear contract proposals to the Army on October 2 and 14, 1981, respectively. At the Army's request, Sikorsky submitted with its multiyear proposal an estimate of the savings that would be realized by the multiyear contract as opposed to three annual contracts. Sikorsky's savings estimate was \$81.1 million, or 7.9 percent. The Army's own analysis confirmed that savings would be at least \$81.1 million.

Following a comprehensive study of the Sikorsky proposals, the Army negotiated prices for a 3-year multiyear contract and a single year buy, in the event the multiyear contract was not authorized by the Congress. Negotiations were completed on December 18, 1981, and on February 4, 1982, DOD notified the Congress of the negotiated multiyear price and estimated savings. The Congress approved the multiyear procurement on April 5, 1982.

OBJECTIVES, SCOPE, AND METHODOLOGY

Our study assessed the validity of both Sikorsky and Army savings estimates attributed to the multiyear contract for Black Hawk helicopters and addressed the question of other benefits of this contract, such as industrial base enhancement. In addition, we tried to identify the specific factors that generated the claimed savings. Since the enhanced multiyear contracting authority for major weapon systems was the direct result of a joint DOD/industry initiative, we looked primarily to Sikorsky and the Army to identify benefits they believed were attributable to the multiyear contract and focused on assessing these benefits.

Savings estimates are the difference between the estimated price of three successive annual contracts and a single 3-year multiyear contract. The validity of the savings is dependent upon the reasonableness of the assumptions and projections used in pricing the respective contracting alternatives. Over- or under-estimating either contract alternative directly impacts on the savings projection. We assessed the reasonableness of the assumptions and projections used by both Sikorsky and the Army.

Our work, performed from February through December 1983, was done primarily at the offices of the prime contractor--Sikorsky Aircraft Division, Stratford, Connecticut--and the Army procuring

activity--the Troop Support and Aviation Materiel Readiness Command, St. Louis, Missouri. We reviewed the multiyear contract; the contractor's multiyear and annual price proposals, cost data, and procurement records; the Army's negotiation files, cost data, and procurement records; and the report prepared by the Army should-cost team. We interviewed contractor and Army officials and discussed with Treasury officials the tax accounting benefits available to businesses engaged in multiyear contracts. We also visited two major Sikorsky subcontractors to discuss how the multiyear contract affected their prices.

There have been several estimates of the monetary savings from the Black Hawk multiyear contract. Of necessity the estimates require the use of various assumptions and are not precise as indicated by the fact that estimated budgetary savings ranged from \$73.9 million to \$99.9 million. We considered the Army's estimate that was based on actual contract negotiation as the most valid and focused our analysis on that estimate. The various savings estimates are discussed in more detail in appendix I.

Our audit was performed in accordance with generally accepted government auditing standards.

ANALYSIS OF MONETARY SAVINGS

The Army's independent analysis confirmed Sikorsky's estimate that the Black Hawk 3-year multiyear contract would result in budgetary savings to DOD of \$81.1 million--about 7.9 percent less than the estimated cost of three annual buys. Our analysis indicated that net savings to the government may be about \$36.6 million, or 4.6 percent. Also, revenue to the U.S. Treasury may be reduced because of the tax implications of a multiyear contract.

The initial \$81.1 million estimate was based on proposal data. At our request the Army developed, in July 1983, a revised savings estimate based upon negotiated contract values. This estimate, which our analysis showed was reasonably supported and accurate, reduced the savings by \$7.2 million to \$73.9 million. We also adjusted this estimate, which represented the Army's budgetary savings, for present value discounting.¹ Discounting

¹In a 1982 study we did for the House Appropriations Committee on the then proposed Black Hawk multiyear program, we pointed out that the estimated savings were not discounted. Discounting considers the costs associated with the earlier expenditure of funds under the multiyear contract to achieve, in part, economic order quantity buying of materials and effectively eliminates escalation avoidance as a factor contributing to savings. The Congress now requires DOD to submit discounted savings estimates in proposing multiyear purchases. For computation and further discussion, see appendix I, pages 6 and 7.

reduces the estimated savings by \$37.3 million, or a net savings of \$36.6 million.

Further, we calculated the effect of differing tax consequences on the estimates. U.S. Treasury regulations allow firms with contracts which require 2 or more years to complete to defer certain costs and all income until the completion year. This could reduce the estimated savings by an additional \$8.1 million if the contractor incurs a tax liability over the life of the contract. DOD said that the income tax consequences are now recognized and will be considered when negotiating future multiyear contracts. For computation and further discussion, see appendix I, pages 8 through 10.

The multiyear savings could be further decreased depending on the resolution of a Defense Contract Audit Agency² report which alleges \$10 million of defective pricing under the multiyear contract. Pricing is defective when a contract price, including profit, is increased because the contractor furnished inaccurate, incomplete, or noncurrent cost or pricing data. Where such conditions exist, the government is entitled to a contract price reduction. If it is assumed that similar defective pricing would have existed had Black Hawk helicopters been bought under annual contracts, there would be no effect on the savings estimates.

ENHANCING THE DEFENSE INDUSTRIAL BASE

Enhancing the defense industrial base is another factor on which proposed multiyear contracts are evaluated. Although the definition of a defense industrial base enhancement is somewhat vague, the following are usually included: (1) existing firms in the defense industrial base expand their capability in terms of machinery, buildings, skilled work force, etc., or (2) new firms enter the defense industrial base. Enhancements to the defense industrial base were not one of the initial legislated criteria for approving a multiyear contract; however, the House Appropriations Committee, during legislative hearings on multiyear contracting, directed DOD to address this issue when requesting multiyear contracting approval.

During the fiscal year 1982 appropriation hearings, the Army was asked to comment on the effects on the industrial base of the then proposed Black Hawk multiyear contract. The Army stated that although these effects had not been quantified in dollars, the contract would contribute to and promote the national security, as well as provide potential cost benefits. Before contract award, Sikorsky advised the Army that it expected that the contract would enhance the industrial base by increasing capital investments at both the prime and subcontractor levels and by increasing subcontractor competition.

²Advisory Report of Postaward Review of Cost or Pricing Data, Contract No. DAAJ09-82-C-A326. (Dec. 8, 1983).

Our study showed that neither Sikorsky nor the Army prepared a plan for improving the industrial base. Such a plan, as a minimum, should have identified existing weaknesses in the base, corrective action planned, and provisions for evaluating the effectiveness of the corrective action taken. Further, neither Sikorsky nor the Army could provide us any evidence to support significant defense industrial base enhancements. Army officials said no attempt was made to monitor Sikorsky's progress toward this end or to document improvements. According to a Sikorsky official, lowering costs was the primary benefit of the multiyear contract with any benefits to the industrial base being incidental.

Because of the acknowledged lack of documentation, we did not attempt to independently identify possible industrial base improvements resulting from this multiyear contract.

OTHER MULTIYEAR BENEFITS IN BLACK HAWK PROGRAM

Sikorsky and Army officials believe that the Black Hawk multiyear program resulted in other benefits besides monetary savings; some of these are shown below.

- Availability of materials in much larger quantities (because more requirements could be bought up front) allowed Sikorsky to expand its capability to produce and deliver lower priced spare parts in support of operational requirements.
- Work force morale and presumably productivity benefited by stabilizing production which provided job security.
- Procuring common parts for other DOD helicopter programs--versions of the Army's Black Hawk are also made for the Navy and Air Force--reduced materials costs under those programs.
- Materials availability and production efficiencies allowed Sikorsky to accelerate deliveries from 8 to 10 helicopters per month. This eliminated some projected inflation and reduced the government's contract price.
- Lower administrative costs to the government and Sikorsky achieved through reduction of bids and proposals, purchase orders, and supplier cost/price analyses.

Although such benefits may be valid no supporting data was provided for our analysis. Further, whether they resulted specifically from the multiyear contract would, in our opinion, be very difficult to determine. Program stability--a condition required to exist before awarding a multiyear program--may also have provided some of the same benefits under a series of stable

annual procurements. Further, savings in the administrative area cannot be quantified due to the marginal impact that a few multiyear contracts might have.

CONCLUSIONS

Our analysis indicated that the Black Hawk multiyear contract should result in savings to the government. We estimate that budgetary savings to the Army will be about \$73.9 million with net savings to the government of about \$36.6 million. In addition, tax revenue to the U.S. Treasury may be reduced by \$8.1 million because of the tax implications of a multiyear contract.

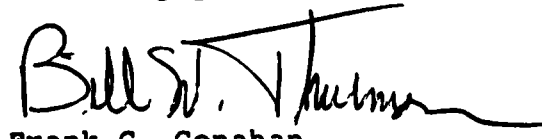
Identification and substantiation of savings and other benefits associated with the contract were both complex and inexact. While our review of the Black Hawk experience confirms that savings and other benefits are possible through use of a multiyear contract for a major weapon system, the inherent uncertainties associated with estimating the savings and other benefits, particularly when the percentage of savings is relatively low, justifies a cautious approach in approving multiyear candidates.

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At your request, we did not obtain formal comments on our report but did obtain informal comments from Sikorsky and the Department of Defense. These are incorporated in appendix I.

We are sending copies of this report today to the Senate Committee on Appropriations; the House Committee on Government Operations; the Senate Committee on Governmental Affairs; the House and Senate Committees on Armed Services; the Secretaries of Defense, the Army, the Navy, and the Air Force; and the Sikorsky Aircraft Division, United Technologies Corporation.

Sincerely yours,

for 
Frank C. Conahan
Director

GAO ANALYSIS OF MONETARY BENEFITS TO THE
GOVERNMENT FROM THE ARMY'S BLACK HAWK HELICOPTER
MULTIYEAR CONTRACT

Our best estimate is that the projected budgetary savings to the Army based on the multiyear negotiated values are about \$73.9 million, or 7.2 percent, compared with the cost of annual procurements for Black Hawk helicopters. After adjusting for the time value of money, the net potential savings to the government are about \$36.6 million, or 4.6 percent. However, the savings estimates are subject to settlement of DOD's postaward contract audits. Also, revenue to the U.S Treasury may be reduced because of tax implications of a multiyear contract. The following details our analysis of monetary savings attributed to the Black Hawk multiyear contract.

ESTIMATES OF SAVINGS

Until our study, estimates of savings were based upon proposed contract values. Because negotiated values are a better basis for analysis, we asked Sikorsky and the Army for estimates based on negotiated prices. The Army estimated the savings at \$73.9 million. At first, Sikorsky declined because it believed the results would be too hypothetical. As we were concluding our fieldwork, Sikorsky officials provided a savings estimate of \$84.8 million. After receiving our tentative observations, Sikorsky officials increased this estimate to \$88.7 million. However, they stated the methodology used for estimating savings based upon proposed and negotiated values was not as sound as using historical and projected costs, which resulted in a savings estimate of \$99.9 million.

Selected estimates prepared by Sikorsky and the Army, as well as our analysis and revised estimates, are summarized and discussed below.

| | <u>Estimated savings</u> | | <u>GAO present value analysis^a</u> | | <u>Potential tax loss^a</u> |
|--|--------------------------|----------------|---|------------------------|---------------------------------------|
| | <u>Amount</u> | <u>Percent</u> | <u>Amount</u> | <u>Savings Percent</u> | |
| | ----- (millions) ----- | | | | |
| Army estimate July 1983 | \$73.9 | 7.2 | \$36.6 | 4.6 | \$8.1 ^a |
| Sikorsky estimate December 1983 | 99.9 | 9.5 | 56.6 | 7.0 | 8.9 |
| GAO-adjusted Sikorsky estimate ^b | 80.9 | 7.8 | 42.0 | 5.2 | 8.1 |

^aMethodology and computations are discussed on pp. 6 to 10.

^bGAO does not consider the adjusted amount valid because of concerns with Sikorsky's methodology as discussed on pp. 4 and 5.

DOD officials expressed the view that use of "percentages of savings" constituted a "political" test of acceptability. They stated a percentage savings test is not the key factor in making decisions on multiyear contracts and asked that we not use percentages in our analysis.

We agree that the use of percentages goes beyond a simple dollar savings test. However, the Congress has shown its interest in not only the dollars that are being saved but also what these dollars represent as a percentage of the proposed contract as well as the total program. In addition, the Congress has expressed concern about the risks of termination and other long-term commitments associated with multiyear contracting, i.e., committing future years' appropriations. Savings percentages, in our view, provide an added measure for assessing the acceptability of the risks involved.

Army's savings estimate based on
December 1981 negotiated contract values

Since the Army and Sikorsky negotiated a multiyear contract, as well as an annual contract--in case the multiyear contract was not approved--data was available to estimate savings based on negotiated amounts.

At our request, the Army, in July 1983, prepared a savings estimate based on the negotiated contract prices. This came to \$73.9 million. The Army attributed the savings to reduced materials costs, stating it could not quantify labor savings.

Our review of the Army's assumptions leading to the negotiated values for the proposed annual and multiyear contracts revealed no basis to question the projection of budgetary savings. However, to calculate the net savings to the government, we estimated the cost of borrowing to finance the earlier expenditure of funds under the multiyear contract. The discounting reduced the budgetary savings by \$37.3 million, for a net savings of \$36.6 million. We also considered the tax implications relative to the differing profit projections under each contracting alternative and the incremental deferment of federal income taxes under the multiyear contract. We estimate the potential loss in tax revenue to be about \$8.1 million.

Two issues, discussed below, illustrate the difficulty of developing precise data on the cost and potential savings associated with the multiyear contract.

Postaward audits of material - DOD postaward audits have indicated materials pricing deficiencies under the multiyear contract.

--In December 1982 the DOD Inspector General reported potential overpricing (where government negotiation deficiencies cause the contract price to be higher than otherwise warranted) of \$30 million to \$40 million and recommended, in part, that the Defense Contract Audit Agency make a defective pricing audit.

--In December 1983 the Defense Contract Audit Agency reported \$16 million in defective pricing and recommended continued audit effort.

The multiyear contract amount may be decreased depending on the resolution of the Defense Contract Audit Agency report on defective pricing. Pricing is defective when a contract price, including profit, is increased because the contractor furnished inaccurate, incomplete, or noncurrent cost or pricing data. Where such conditions exist, the government is entitled to a contract price reduction. If it is assumed that similar defective pricing would have existed had Black Hawk helicopters been bought under annual contracts, there would be no effect on the savings estimates.

Labor - DOD officials said that our analysis should recognize reductions in labor costs achieved by Sikorsky under the multiyear contract. The DOD officials did not know where or how the reduced

labor costs, or "savings," were being achieved but plan to evaluate them before awarding any follow-on contracts with Sikorsky. They believe that labor savings have resulted from the multiyear contract.

We agree that any reductions in labor costs being achieved by Sikorsky under the contract would be difficult to quantify or relate solely to multiyear contracting. Since the Army did not negotiate any labor savings in the multiyear contract price, any subsequent savings in labor under the contract accrue to Sikorsky.

Sikorsky, before the multiyear contract, was undertaking a major effort to improve the efficiency of its production operations. The Army, however, apparently was not able to predict the impact of the improvement program on reducing labor costs. In this regard, an Army official said that the government should benefit from lower unit costs in follow-on Black Hawk buys. It would appear, however, that the use of annual contracts would have permitted the government to benefit from actual reductions in labor costs on the second and third years' buys instead of the fourth year--the first year succeeding the current multiyear contract.

November 1983 Sikorsky savings estimate
based upon historical data and projections

In November 1983, after we completed our fieldwork, Sikorsky provided us a savings estimate totaling \$92.5 million using a new methodology. Sikorsky said we should examine and use this estimate in our analysis instead of previous estimates which it considered more hypothetical. The methodology used cost data as of December 1981 to set a benchmark from which three annual contract amounts were extrapolated. These were then compared to the 3-year negotiated multiyear contract price to estimate savings.

We visited Sikorsky and examined some of the supporting documentation for the estimate. At that time, Sikorsky provided us with changes which increased its savings estimate to \$99.9 million. Although Sikorsky provided summary data in support of its estimate to complete the ongoing fiscal year 1981 Black Hawk buy, it could not provide us detailed source data to support its overall estimate.

Sikorsky's summary data used a higher general overhead rate than the rate in the forward pricing rate agreement with the government under consideration at the time of the fiscal year 1981 buy. The rate in this agreement was the rate the Army believed it negotiated under both contracts. Since Sikorsky had agreed to the forward pricing rate during the time frame of its single year

benchmark estimate, we believe this rate should have been used. Not to do so overstates the annual estimate, thereby increasing savings when compared to the negotiated multiyear contract. Our adjustment for this factor reduced Sikorsky's estimate to \$80.9 million.

Because of such weaknesses in the methodology and the lack of supporting data, we could not develop a reliable revised estimate and therefore considered Sikorsky's revised method less reliable than using the Army's negotiated values as the bases to estimate savings. Sikorsky officials declined to discuss the details of our evaluation of their \$99.9 million estimate.

Source of the multiyear contract savings

House Committee on Appropriations Report No. 97-335 cites improved economy and efficiency in the production process and larger quantity buying of materials as two of the reasons for multiyear contracting. However, the House Committee on Armed Services, in its October 1983 report on the DOD Authorization Act, questioned whether buying larger quantities of materials was a valid savings to the extent that it merely represented escalation avoidance due to the earlier purchase or production of the materials as opposed to true production efficiencies. Discounting projected savings adjusts for this factor.

Sikorsky's initial savings estimate was based primarily on its expectations of purchasing materials from its suppliers at lower prices on a multiyear basis than on an annual basis. Lacking a better basis, Sikorsky judgmentally attributed 60 percent and 30 percent of the estimated savings to inflation avoidance and buying larger quantities of materials, respectively. The remaining 10 percent was attributed to Sikorsky production efficiencies.

Sikorsky had also tried to gain greater insight into the source of savings by asking its suppliers to submit explanations of how savings would be achieved with their annual and multiyear price quotations. Our examination of responses associated with 50 major items--representing 56.6 percent of the material costs--showed that suppliers explained savings for only 24 items. Although the explanation most often cited was inflation avoidance, with production efficiencies next, and larger quantity buying last, most suppliers did not associate dollar amounts with their explanations. The lack of supplier responses suggests that they were either unable to quantify the source of savings or unwilling to do so in order to maintain a better negotiation posture.

CALCULATION OF NET
SAVINGS AND TAX IMPLICATIONS

The following describes our methodology for computing adjustments to budgetary savings for the earlier expenditure of funds under this multiyear contract and federal income tax implications.

Present value analysis

Office of Management and Budget Circular A-94 directs that executive agencies use present value discounting in evaluating government decisions on the initiation, renewal, or expansion of any program or project which is expected to commit the government to a series of measurable costs for 3 or more years.

Investment alternatives will normally involve incurring different costs at different times. In order for two or more alternative to be compared on an equal economic basis, it is necessary to consider the costs of each alternative currently or at their "present values." This recognizes that money has earning power over time.

We performed a present value analysis of Sikorsky and Army savings estimates to estimate the impact on savings of the earlier expenditures under the multiyear contract.

Although discounting and present value analysis are generally accepted practices, selecting an appropriate interest rate has been the subject of much controversy. The rate applied directly affects the results of an analysis. For federal government investment analyses and decisionmaking, arguments have been presented for interest rates ranging from the cost of borrowing by the Treasury to rates of return that can be earned in the private sector. Since Treasury meets most government funding requirements, we have maintained that its estimated cost to borrow is a reasonable basis for establishing the interest rate to be used in present value analysis. Accordingly, for our analysis, we used the average yield on outstanding marketable Treasury obligations that had remaining maturities similar to the time period involved in our analysis. The average yield was 12.9 percent as of December 18, 1981, when negotiations were completed by the Army and Sikorsky for the multiyear Black Hawk contract.

For our analysis we used Sikorsky's projected expenditure rates as submitted with its annual and multiyear proposals and concurred in by the Army. We could not compare the proposed rates with actual expenditures because contract modifications had caused the expenditure rate to significantly increase and Sikorsky's accounting system did not separately account for expenditures by basic contract and modifications. Accordingly, the discounted values, which are very sensitive to the rate of expenditure, are only as reliable as the expenditure rates projected by Sikorsky.

We used the Army's negotiated savings estimate of \$73.9 million to determine the effect of discounting as follows.

| | Fiscal year | | | | | |
|----------------------------|-------------------------------|-------------|---------------------------|-------------|---------------------------|--------------|
| | <u>1982</u> | <u>1983</u> | <u>1984</u> | <u>1985</u> | <u>1986</u> | <u>Total</u> |
| | ----- (millions) ----- | | | | | |
| <u>Annual contracts</u> | | | | | | |
| Estimated expenditures | \$ 37.7 | \$223.5 | \$352.6 | \$340.6 | \$69.5 | \$1,023.9 |
| Present value ^a | 37.7 | 198.0 | 276.6 | 236.7 | 42.8 | 791.8 |
| <u>Multiyear contract</u> | | | | | | |
| Estimated expenditures | 43.0 | 293.0 | 315.0 | 272.0 | 27.0 | 950.0 |
| Present value ^a | 43.0 | 259.5 | 247.1 | 189.0 | 16.6 | 755.2 |
| SUMMARY: | | | | | | |
| | <u>Current dollar savings</u> | | <u>Discounted savings</u> | | <u>Discounting impact</u> | |
| Annual | \$1,023.9 | | \$791.8 | | | |
| Multiyear | <u>950.0</u> | | <u>755.2</u> | | | |
| Difference | \$ 73.9 | | \$ 36.6 | | \$ 37.3 | |

^aPresent value was calculated using a pretax rate of 12.9 percent. This was based on the average yield on outstanding marketable Treasury obligations that had remaining maturities comparable to this period of analysis. The discount rate yields the following discount factors:

| | |
|------|--------|
| 1982 | 1.0000 |
| 1983 | .8857 |
| 1984 | .7845 |
| 1985 | .6949 |
| 1986 | .6155 |

Federal income tax effects
on savings estimate

Multiyear contracts result in earlier expenditures and longer periods of contract completion than do annual contracts in comparable circumstances. Under contracts taking longer than a year to complete, Treasury regulations allow contractors to use the completed contract method for federal income taxes and defer payments of taxes on profits until the year of completion. Treasury officials stated that contractors electing to use this method will obtain a greater deferral of tax payment than otherwise available. Also, because multiyear contracts have lower total negotiated costs than annual contracts for a comparable period, they have a lower amount of negotiated profit. Since the methodology used for determining savings compares the total projected prices, the difference in the profit amount is included in savings.

Since Sikorsky uses the completed contract method of accounting for federal income taxes, we developed, with Treasury's assistance, an economic model to estimate the potential tax effects using the multiyear and annual contract values that resulted in our savings. The model, which computes the tax consequence due to different profit amounts, as well as adjusts for the additional tax deferral period, contained the following assumptions, in addition to the 12.9-percent present value discount rate:

- Profit rate: 13 percent. The negotiated profit rate for the multiyear contract was 15 percent. Treasury officials recommended a 2-percent decrease in the assumed profit rate to account for contractor's interest and other unallowed costs.
- Corporate tax rate: 35 percent. This rate is used in Treasury's economic models.
- Allowable period costs; i.e., cost incurred under the contract that can be charged against operations in each tax year: 7-1/2 percent. This is used in the Treasury economic models.

The following schedules apply the above model criteria to the budgetary savings of \$73.9 million under the Army's negotiated contract estimates.

Annual Contract

| | <u>Calendar year</u> | | | | <u>Total</u> |
|---------------------------|------------------------|----------------|----------------|----------------|-----------------|
| | <u>1982</u> | <u>1983</u> | <u>1984</u> | <u>1985</u> | |
| Deliveries: | | | | | |
| Lot 6a | 3 | 99 | - | - | 102 |
| Lot 7 | - | 3 | 93 | - | 96 |
| Lot 8 | - | - | 3 | 93 | 96 |
| Income recognized: | ----- (millions) ----- | | | | |
| Lot 6 | \$ - | \$325.0 | \$ - | \$ - | \$ 325.0 |
| Lot 7 | - | - | 337.9 | - | 337.9 |
| Lot 8 | - | - | - | 361.0 | 361.0 |
| Total income | <u>-</u> | <u>325.0</u> | <u>337.9</u> | <u>361.0</u> | <u>1,023.9</u> |
| Costs recognized: | | | | | |
| Lot 6--Period | 3.9 | 17.7 | - | - | 21.6 |
| Allocable | - | 266.0 | - | - | 266.0 |
| Lot 7--Period | - | 1.3 | 21.1 | - | 22.4 |
| Allocable | - | - | 276.6 | - | 276.6 |
| Lot 8--Period | - | - | 2.7 | 21.3 | 24.0 |
| Allocable | - | - | - | 295.5 | 295.5 |
| Total costs | <u>3.9</u> | <u>285.0</u> | <u>300.4</u> | <u>316.8</u> | <u>906.1</u> |
| Taxable income | <u>(\$ 3.9)</u> | <u>\$ 40.0</u> | <u>\$ 37.5</u> | <u>\$ 44.2</u> | <u>\$ 117.8</u> |
| Tax consequences | (\$ 1.4) | \$ 14.0 | \$ 13.1 | \$ 15.5 | \$ 41.2 |
| Present value | (\$ 1.4) | \$ 12.4 | \$ 10.3 | \$ 10.8 | \$ 32.1 |

^aLots 6, 7, and 8 are fiscal years 1982, 1983, and 1984 buys, respectively.

Multiyear Contract

| | <u>Calendar year</u> | | | | <u>Total</u> |
|------------------------|----------------------|-----------------|-----------------|----------------|----------------|
| | <u>1982</u> | <u>1983</u> | <u>1984</u> | <u>1985</u> | |
| Deliveries: | | | | | |
| Lot 6 | 3 | 99 | - | - | 102 |
| Lot 7 | - | 3 | 93 | - | 96 |
| Lot 8 | - | - | 3 | 93 | 96 |
| ----- (millions) ----- | | | | | |
| Income recognized | \$ - | \$ - | \$ - | <u>\$950.0</u> | <u>\$950.0</u> |
| Costs recognized: | | | | | |
| Period | 5.4 | 21.8 | 21.2 | 14.6 | 63.0 |
| Allocable | - | - | - | <u>777.7</u> | <u>777.7</u> |
| Total costs | <u>5.4</u> | <u>21.8</u> | <u>21.2</u> | <u>792.3</u> | <u>840.7</u> |
| Taxable income | <u>(\$5.4)</u> | <u>(\$21.8)</u> | <u>(\$21.2)</u> | <u>\$157.7</u> | <u>\$109.3</u> |
| Tax consequences | (\$1.9) | (\$ 7.6) | (\$ 7.4) | \$ 55.2 | \$ 38.3 |
| Present value | (\$1.9) | (\$ 6.7) | (\$ 5.8) | \$ 38.4 | \$ 24.0 |

SUMMARY:

| | |
|--------------------|-------------------|
| Annual contact | \$32.1 (See p. 9) |
| Multiyear contract | <u>24.0</u> |
| Difference | <u>\$ 8.1</u> |

The above model uses a before-tax discount rate. Another option, suggested by DOD, would be to use an after-tax rate. If used this would increase savings by \$1.5 million.

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END

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